

REMARKS

Prior to this Amendment and Response, original claims 1-16 were pending in the Application. Herein, Applicants ask that claims 1-6 and 8-16 be cancelled, claims 17-39 be added, and that claim 7 be amended; therefore, upon entry of the Amendment, claims 7 and 17-39 will remain pending in the Application. Entry of the Amendment and allowance of the pending claims is respectfully requested.

Specification

In the Office Action, no objection was made to the Specification. Applicants, however, have made numerous minor amendments in an effort to improve its clarity. These changes are described below.

The references to a "color scan camera" have been amended to simply refer to a "camera". Although use of what is commonly referred to as a "color-scan camera" is in accordance with the present invention, the word "scan" in describing the internal operation of that camera should not be confused with the operation of scanning a work piece, that is, an object such as a PCB. Scanning in this sense means moving a light source (to illuminate the surface or an area of the surface) or a camera (to capture an image of a surface or an area of the surface). For example, the coherent light source of the present invention may be used to form a line (of illumination) on the surface of the object. The camera and light source may then be moved (scanned) together with respect to the surface such that the location of the illuminated region is continually changing.

Also, the inspection system will now refer to inspecting the surface of an object, or simply the surface. Presumably, the surface will bear a number of

structures, height information about which is desired, but for clarity references to “inspecting at least one structure” (on the surface) will not be used.

These changes are intended to clarify rather than alter the meaning of the specification, and Applicants believe that no new matter has thereby been added.

Claim Rejections – 35 U.S.C. §103

In of the Office Action, claims 1-16 were rejected under 35 U.S.C. §103 as follows: (¶ 4) claims 1-5 and 9-13 as being unpatentable over *Shintani et al.* (U.S. Patent No. 5,298,977) and Admission; (¶ 5) claims 6 and 14 as being unpatentable over *Shintani et al.*, Admission, and *Decavel et al.* (U.S. Patent No. 4,253,113); (¶ 6) claims 7 and 15 as being unpatentable over *Shintani et al.*, Admission, and *Sayag* (U.S. Patent No. 5,055,667); and (¶ 7) claims 8 and 16 as being unpatentable over *Shintani et al.*, Admission, and *Milnes* (U.S. Patent No. 3,187,185).

In response, Applicants have cancelled claims 1-6 and 8-16 (without conceding or addressing their patentability) in favor of new claims 17-35. The new claims are similar to those previously existing, but focus first on the novel feature of using a coherent light source to create a line (or lines) that moves (scans) across the surface to be inspected. The coherent light source is strobed at a predetermined exposure time, “exposure” here referring to the period when the coherent light source is “on” (and the image-capturing camera is thereby exposed to light emanating from it. Preferably, the predetermined exposure time is such to allow specific regions of the service to be analyzed (as may be desirable). A plurality of lines may be used, and if so they may combine to form a grid on the object surface.

One or more visible light sources may be used together with the coherent light source, the visible light sources being at light wavelengths different from each other

and from the coherent light source so that an image-capturing device (such as a multi-channel color scan camera) may capture separately the respective images created by each light source even if they are "on" at the same time. The invention as thus recited is not disclosed or suggested by the recited prior art.

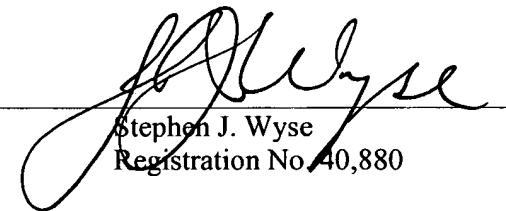
Other amendments have been made to the Specification and Claims to correct typographical and grammatical errors, and to increase their clarity.

In light of the foregoing, claims 7 and 17-39, particularly as now amended, are believed to be in condition for allowance. Accordingly, entry of the Amendment and allowance of the then-pending claims is respectfully requested

Respectfully submitted,

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